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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,525	02/15/2006	Mitsuhiro Kashiwabara	112857517	2922
29175 7590 02/02/2009 BELI, BOYD & LLOYD, LLP P. O. BOX 1135 CHICAGO, IL 60690				
EXAMINER				
BREVAIL, ELMITO				
ART UNIT		PAPER NUMBER		
2889				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/568,525

**Applicant(s)**

KASHIWABARA ET AL.

**Examiner**

ELMITO BREVAL

**Art Unit**

2889

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 October 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-5 and 7-14 is/are rejected.  
7) ☒ Claim(s) 6 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 09 October 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

The amendment filed on 10/09/2008 has been entered.

Claims 1-14 are pending.

The previous rejections have been withdrawn.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, and 7-10, 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al., (JP: 10-003990) of record by the applicant in view of Forrest et al., "White-light-emitting organic electroluminescent devices based on interlayer sequential energy transfer", APPLIED PHYSICS LETTERS, Vol. 75, No. 7, 16 August 1999. The examiner is using the English translation of the Japanese reference of record by the examiner

**Regarding claim 1**, Nakamura ('990) teaches (in at least fig. 1 and corresponding paragraphs) an organic EL device comprising an anode (20), a cathode (40), and an organic layer (30) including a plurality of light emitting layers provided between the anode (20) and the cathode (40), wherein the light emitting layers comprise a red light emitting layer (33), a green light emitting layer (32) provided directly on the red light emitting layer (33), and a blue light emitting layer (31) provided directly on the green light emitting layer (31).

However, Nakamura ('990) does not teach the red light emitting layer is formed on the anode.

Further regarding claim 1, Forrest in the same field of endeavor teaches (in at least fig. 1 of page 889; 1<sup>st</sup> paragraph) an OLED device comprised of, in part, a red light emitting layer formed on the anode side in order to improve the luminance efficiency of the device.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the red light emitting layer structure of Forrest in the device of Nakamura in order to improve the luminance efficiency of the device.

**Regarding claim 2**, Nakamura/Forrest teach the red light emitting layer has a hole transporting property (see Forrest page 889, 1st paragraph).

**Regarding claim 3**, Nakamura/Forrest teach (Nakamura [0006]-[0018]) the red light emitting layer includes a hole transporting property (also Forrest page 889, 1<sup>st</sup> paragraph).

**Regarding claim 4**, Nakamura ('990) teaches ([0006]-[0018]) the green light emitting layer has a positive and negative charge transporting property.

**Regarding claim 5**, Nakamura ('990) teaches the blue light emitting layer has an electron transporting property.

**Regarding claim 7**, Nakamura ('990) teaches ([0008]-[0017]) the red light emitting layer has a hole transporting property, the green light emitting layer has a positive and a negative transporting property, and the blue light emitting layer has an electron transporting property.

**Regarding claim 8**, Nakamura ('990) teaches (in at least fig. 1) a display device comprising a color filter ([0010]; [0012]) provided on a light take-out surface side of an organic EL device for emitting white light, wherein the organic EL device comprises an organic layer (30) including a plurality of light emitting layers, the organic layer interposed between the anode (20) and the cathode (40); and the light emitting layers comprise a red light emitting layer (33), a green light emitting layer (32), and a blue light emitting layer (31) laminated in respective order.

However, Nakamura ('990) does not teach the red light emitting layer is formed on the anode.

Further regarding claim 8, Forrest in the same field of endeavor teaches (in at least fig. 1 of page 889; 1<sup>st</sup> paragraph) an OLED device comprised of, in part, a red light emitting layer formed on the anode side in order to improve the luminance efficiency of the device.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the red light emitting layer structure of Forrest in the device of Nakamura in order to improve the luminance efficiency of the device.

**Regarding claim 9**, Nakamura/Forrest teaches (in fig. 1) the red light emitting layer (33) is composed of a single layer.

**Regarding claim 10**, Nakamura/Forrest teach (in fig. 1) the green light emitting layer (32) is composed of a single layer.

**Regarding claim 12**, Nakamura/Forrest teach ([0006]-[0012]) the red light emitting layer supplies holes to the green light emitting layer.

**Regarding claim 13**, Nakamura ('990) teaches ([0006]-[0014]) the blue light emitting layer supplies electrons to the green light emitting layer.

**Regarding claim 14**, Nakamura ('990) teaches (in fig. 1) an organic EL device comprising an anode (20), a cathode (40), and an organic layer (30) including plurality of light emitting layers provided between the anode (20) and the cathode (40), wherein said light emitting layers comprises a red light emitting layer (33), a green light emitting layer (32) provided directly on the red light emitting layer (35), and a blue light emitting layer (31) provided directly on the green light emitting layer (32), wherein each of the red light emitting layer (33) and green light emitting layer (32) is composed of a single layer.

However, Nakamura ('990) does not teach the red light emitting layer is formed on the anode.

Further regarding claim 14, Forrest in the same field of endeavor teaches (in at least fig. 1 of page 889; 1<sup>st</sup> paragraph) an OLED device comprised of, in part, a red light emitting layer formed on the anode side in order to improve the luminance efficiency of the device.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the red light emitting layer structure of Forrest in the device of Nakamura in order to improve the luminance efficiency of the device.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al., (JP: 10-003990) in view of Forrest et al., "White-light-emitting organic electroluminescent devices based on interlayer sequential energy transfer", APPLIED

PHYSICS LETTERS, Vol. 75, No. 7, 16 August 1999 in further view of Suzuki et al., (US. Pat: 6,198,217) of record by the examiner.

**Regarding claim 11**, Nakamura/Forrest teach all the claimed limitations except for a protective film covering the organic layer.

Further regarding claim 11, Suzuki ('217) teaches an organic EI device comprised of, in part, a protective layer (P of fig. 1; col. 2, line 60) covering the organic layer for the purpose of protecting the device against moisture.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the protective layer of Suzuki into the device of Nakamura for the purpose of protecting the device against moisture.

#### ***Allowable Subject Matter***

Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 6, the prior art of record neither teaches nor suggests the claimed limitations as set forth in claim 6, especially the limitation a blue light emitting layer comprises a positive and negative charge transporting blue light emitting layer and an electron transmitting blue light emitting layer laminated in this order from the anode side.

***Response to Arguments***

Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ricks et al., (US. Pub: 2005/023,3166) teaches an OLED device with a red light emitting layer forms on the anode side.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELMITO BREVAL whose telephone number is (571)270-3099. The examiner can normally be reached on M-F (8:30 AM-5:00 Pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Toan Ton can be reached on (571)-272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

January 29, 2009  
/Elmito Breval/  
Examiner, Art Unit 2889

/Joseph L. Williams/  
Primary Examiner, Art Unit 2889